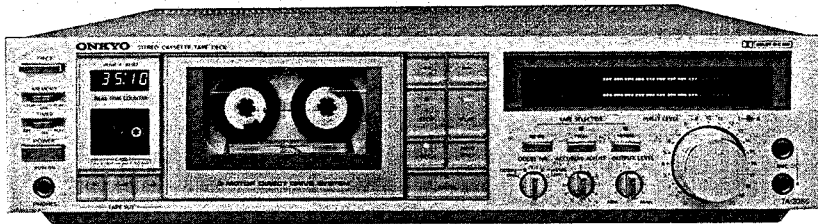


ONKYO® SERVICE MANUAL**STEREO CASSETTE
TAPE DECK
MODEL TA2055****TABLE OF CONTENTS**

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ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

Track System:	4-track, 2-channel stereo	Headphone Jack: 1
Recording System:	AC bias	8 Ω –200 Ω
Erasing System:	AC erase	DIN Jack: 1 (only G/W models)
Tape Speed:	4.8cm/sec.	Standard output level:
Wow and Flutter:	0.035% (WRMS)	1100mV
Frequency Response:	20–16,000Hz	(at 0dB)
	(20–15,000Hz \pm 3dB)	Optimum load impedance:
	(normal position tape)	more than 50k Ω
	20–18,000Hz	
	(20–17,000Hz \pm 3dB)	Motors:
	(high position tape)	DD motor: 1 DC motor: 2
	20–19,000Hz	Heads:
	(20–18,000Hz \pm 3dB)	Hard permalloy head: 1
	(metal position tape)	Ferrite head: 1
Signal-to-Noise Ratio:	Dolby NR out: 60dB	Semiconductors:
	(metal position tape)	(G/W models)
	A noise reduction of 10dB	TR: 63 Diodes: 22
	above 5kHz and 5dB at 1kHz	IC: 13 LED: 13
	is possible with Dolby B.	(D model)
	A noise reduction of 20dB	TR: 58 Diodes: 19
	at 5kHz is possible with	IC: 13 LED: 13
	Dolby C.	Power supply:
Input Jacks:	Microphone Jacks: 2	AC120V, 60Hz (D model)
	Minimum input level:	AC220V, 50Hz (G model)
	0.3mV/600 Ω	AC120/220V, 50/60Hz
	Input impedance: 5k Ω	(W model)
	Optimum mic impedance:	Power Consumption:
	200 Ω –50k Ω	28W
	Line In: 2	Dimensions:
	Minimum input level: 50mV	418(W) \times 100(H) \times 370(D)
	Input impedance: 50k Ω	16-1/2" \times 3-15/16" \times 14-9/16"
	DIN Jack: 1 (Only G/W model)	Weight:
	Minimum input level:	6.7kg. (14.8lbs.)
	0.1mV/1k Ω	Accessories:
	Input impedance: 2.7k Ω	Pin-type connecting cords
Outputs:	Line Out: 2	
	Output level: 1100mV	
	(at 0dB)	
	Optimum load impedance:	
	over 50k Ω	

Mechanism specification

PLAY Torque:	35 ~ 60 grcm
FF/REW Torque:	55 ~ 140 grcm
Wow & Flutter:	Less than 0.035%
Auto-Stop Time:	5 \pm 1 sec.
Timer-Start Time:	5 \pm 1 sec.
Rewind Time:	Less than 90 sec. (Use C-60)
Eject Time:	0.3 ~ 2 sec.

Specifications and external appearance are subject to change without notice because of product improvements.

SPECIAL MODES OF OPERATION

Real Time Tape Counter

The real time tape counter can be used in two ways:

1. Consumed Time indication (CONS)

When power is turned on, the Real Time Counter will read 0:00 and the green CONS indicator immediately below the counter will come on. Once tape transport has begun in the record or play mode, the counter will begin counting the elapsed time. The two digits on the left side are the minutes and the two digits on the right are the seconds. To return the counter to 0:00, gently press the Reset panel.

2. Remaining Time Indication (REMA)

The real time counter can also be used to show the amount of time remaining on a cassette as it is being recorded or played back. To use this function, gently press the Tape Size button corresponding to the cassette about to be used. When one of the Tape Size buttons has been pressed, the green REMA indicator will come on and the counter

will display the cassette length selected (for example [C:60] if C-60 has been selected) for about five seconds. During this time, the microcomputer is calculating the amount of remaining time. Once the calculations have been completed, the remaining time will be displayed. Note that this function is possible only during the record or play mode.

- If you mistakenly press the incorrect Tape Size button, the remaining time indication will be shorter than the actual remaining time if a cassette length shorter than the correct length is pressed (for example when C-46 is pressed when a C-60 cassette is used) and longer than the actual remaining time if a cassette length longer than the correct length is pressed (for example when C-90 is pressed when a C-60 cassette is used).
- Follow the directions below when using cassettes of a length other than C-46, C-60 and C-90 to obtain the correct remaining time indication:

- C-50: press C-46 and C-60 simultaneously
 C-80: press C-60 and C-90 simultaneously
 C-120: press C-46 and C-90 simultaneously

Note: Once the time indication has been changed from consumed time to remaining time, it can not be returned to the consumed time (COMS) mode. Also, if the reset button is pressed during the remaining time (REMA) mode, the display will return to 0:00 and begin counting tape transport time from that point.

3. To Obtain the Most Accurate Time Indications Possible: The real time counter is not a clock so there is a slight difference between the tape transport time as shown by the counter and the actual time that has elapsed over that period. Including the small differences in tape lengths between different manufacturers, this error is about 30 seconds for C-46 cassettes (from start to finish), about 40 seconds for C-60 cassettes and about 60 seconds for C-90 cassettes. To obtain a more precise reading of remaining time near the end of a cassette, press the correct Tape Size button once again to repeat the remaining time calculations. When a cassette of a different length is inserted, press the Tape Size button for the new length. Once the new remaining time value is displayed, press the reset button to return the display to 0:00 and then press the correct Tape Size button a second time to obtain an even more precise remaining time value.

Note: The real time counter is designed on the assumption that one side of a C-60 cassette is 30 minutes and 40 seconds. In general, most tapes are slightly longer than this, so the counter will return to about 99:20 instead of 0:00 when a tape is rewound to the beginning.

When using cassette with large hubs, the remaining time indication does not operate accurately so only the consumed time should be used.

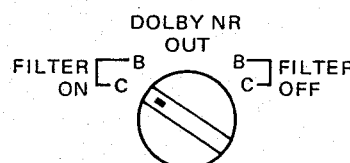
The Dolby Noise Reduction System

There are three types of Dolby noise reduction systems: Dolby A, Dolby B and Dolby C. Dolby A is used only in professional applications. Dolby B is the system that most cassette tape decks use to reduce the background tape noise that is inherent in all cassette tapes. Recently, Dolby Laboratories developed an even more effective noise reduction system, Dolby C, in response to the demand for increasingly better sound quality from cassette tapes. All three Dolby noise reduction systems operate by boosting high range signals during recording that fall below a certain input level. That's because tape hiss is most prominent during quiet, high end portions of a recording. These same signals are the reduced back to their original strength during playback thereby reducing the background noise by the same amount. In order to operate only when necessary, the Dolby system has a varying effect depending on the input level and frequency of the material being recorded. Dolby C can reduce background noise by as much as 20 dB (above 5kHz). Since the midrange tends to sound unnaturally strong when noise is suppressed only in the high range,

Dolby C extends its noise reduction effect down to a lower frequency range than Dolby B. In addition to its noise reduction function, Dolby C has an antisaturation network that lowers high input levels before recording them and returns the signals to their original strength during playback. This raises the high frequency saturation level of cassette tapes to allow you to record signals that would normally cause distortion. The maximum output level of cassette tapes is increased by more than 4dB at 10kHz by this system.

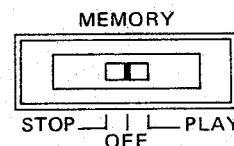
Using the Dolby NR Selector

When an FM stereo broadcast is recorded using one of the Dolby NR systems, the 19kHz pilot signal and 38kHz sub-carrier signal can cause the Dolby circuitry to operate improperly. To prevent this from occurring the Dolby NR selector has filter on and filter off positions for both Dolby NR systems. Use one of the filter on positions when recording an FM stereo broadcast to block the pilot and sub-carrier signals. Use the filter off positions at all other times.



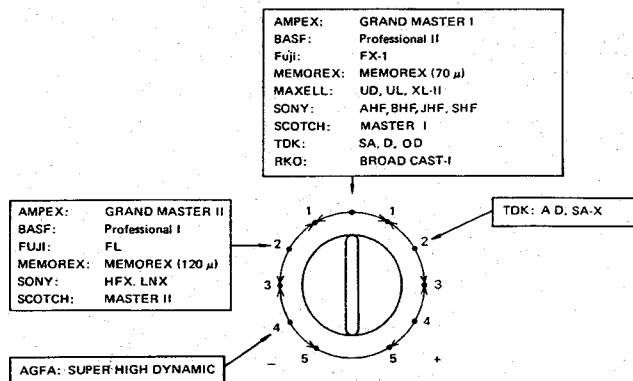
Using the Memory Switch

When the memory switch is in the STOP position, tape will be rewound to the point where the real time counter reads 0:00 when the rewind button is pressed. In the PLAY position, tape will be rewound to the 0:00 point and then the TA-2055 will automatically switch to the playback mode. Actually, tape is rewound to the 99:57 point to be sure the beginning of the song you want to hear is not missed. This is not a malfunction of the unit. If you want to start recording, advance the tape to the 0:00 point to be sure you don't cut off the end of the previous song. To rewind the tape beyond the 0:00 point, press the rewind button again.

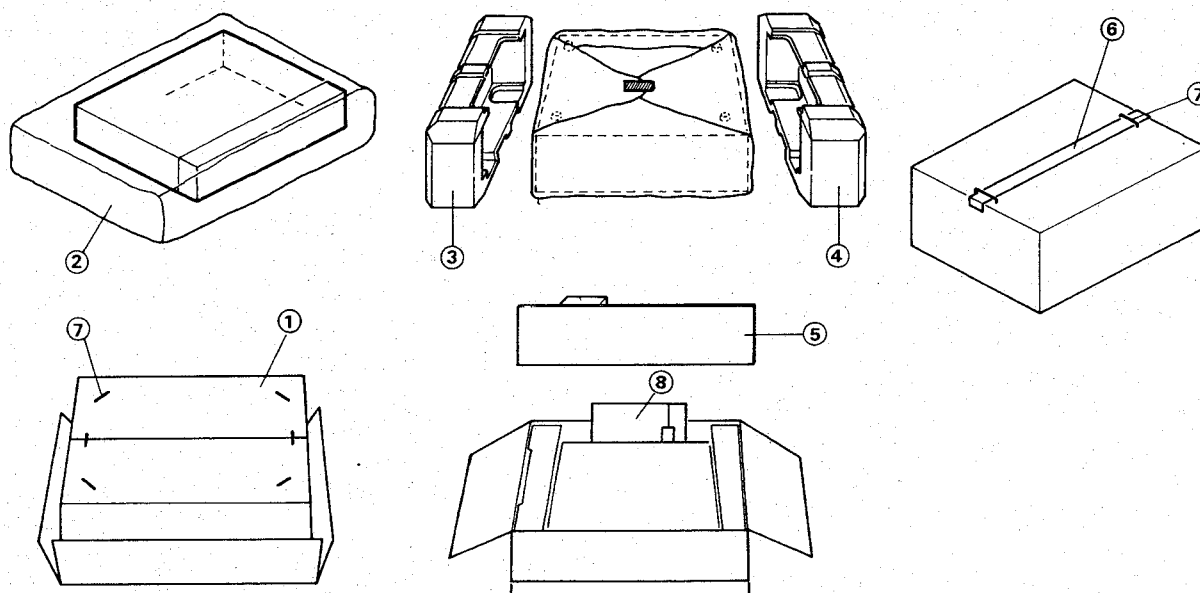


Using the ACCUBIAS Adjust Knob

Although the TA-2055 is equipped with an ACCUBIAS system for fine bias adjustment, you will get excellent results with most tapes by just leaving the bias adjustment knob in the center clickstop position. Nevertheless, some tapes may require additional bias adjustment in order to give flat frequency response. In those cases, refer to the following diagram. For tapes not listed, use the 0 setting. The Accubias adjust knob can be adjusted only when using normal and high position tapes.



PACKING VIEW



D model

REF. NO. PARTS NO. DESCRIPTION

1	29050544	Master carton box
2	29100036A	Poly bag
3	29090627	Pad, right
4	29090626	Pad, left
5	29090674A	Pad, front
6	260012	Damprom tape
7	282301	Sealing hook
8		Accessory bag ass'y
	29340592	Instruction manual
	253074	Connection cable
	29365006-1	Warranty card
	29358002	Service station list
	29100005	220x330mm, Poly bag
	29355085	Caution sheet

G/W models

REF. NO. PARTS NO. DESCRIPTION

1	29050544	Master carton box
2	29100036A	Poly bag
3	29090627	Pad, right
4	29090626	Pad, left
5	29090674A	Pad, front
6	260012	W=50mm, Damprom tape
7	282301	Sealing hook
8		Accessory bag ass'y
	29340593	Instruction manual
	253074	Connection cable
	29365005-3	Warranty card [G]
	25055040	CV-K-2, Conversion plug [W]
	29100005	220x330mm, Poly bag
	29355085	Caution sheet

[G] : Only Germany model

[W] : Only 120/220 V model

ADJUSTMENT PROCEDURES

PRECAUTIONS

- Before adjustment, clean the following parts with an alcohol moistend swab.
 - * record/playback head
 - * erase head
 - * pinch roller
 - * capstan
 - * rubber belt
- Do not use magnetized screwdriver for adjustments.
- Demagnetize record/playback head with a head demagnetizer.
- The switches and controls should be set as follows unless otherwise specified.

TAPE SEL. NORM
 DOLBY NR. OUT
 OUTPUT MAX
 INPUT LEVEL 0
 ACCUBIAS Center
 TIMER/MEMORY OFF

1. Play torque adjustment

Play the torque meter TW-2111 back.

Adjust the R796 so that the torque of take-up reel becomes 40 gr-cm to 45 gr-cm.

2. Tape speed adjustment

Connect the frequency counter to the line output terminal. Play the MTT-111 back.

Adjust the semi-fixed resistor on the motor control pc board so that the counter indication becomes 3,010Hz.

3. Real time counter adjustment

Connect the frequency counter to the F290 terminal on the control pc board.

Adjust the R797 so that the frequency counter indication becomes 301Hz.

4. Head azimuth adjustment

- Play the test tape VTT-658 back.
- Adjust the head azimuth screw so that the phase relationship between L- and R-channels approximates 0 degrees as indicated on the oscilloscope.
- At this time confirm that play back output level is approximately the maximum value in the AC voltmeter.
- Then confirm that the phase difference of the respective frequency is with in the rated value. 90 degrees or less in the range of 40Hz to 10kHz is required.
- Secure the screw with the locking paint.

TEST EQUIPMENT/TOOLS REQUIRED:

Audio ocsillator

Digital frequency counter

Oscilloscope

Attenuator

AC voltmeter

Non-magnetic screw drive

Blank tapes (completely erased)

NORMAL UD-C90

HIGH UD-XL/II

METAL MX

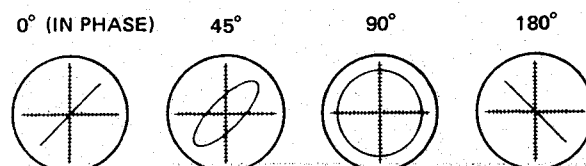
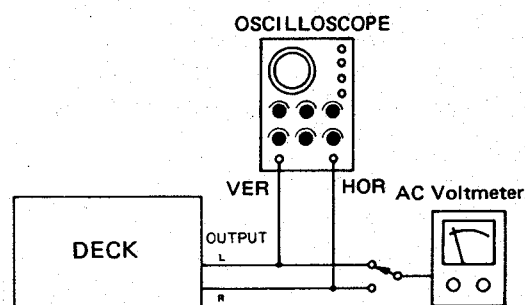
Test tapes

VTT-658 : 10kHz, - 15dB

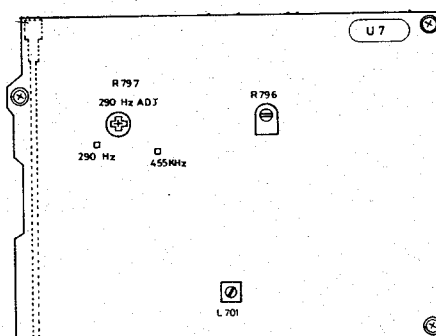
MTT-111 : 3kHz, - 10dB

MTT-150 : Dolby level calibration
400Hz tone 200nWb/m

TW-2111 : Touque meter

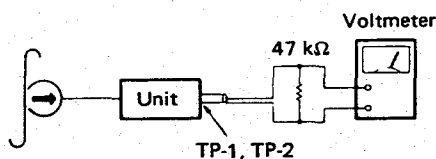


Confirming phase relationship



5. Playback level adjustment

Connect the AC voltmeter to the TP1 and TP2 terminals. Insert the MTT-150 test tape into the cassette holder. Play the MTT-150 back. Adjust the R123 (L ch.) and R124 (R ch.) semi-fixed resistors so that the indication of voltmeter becomes 580mV.



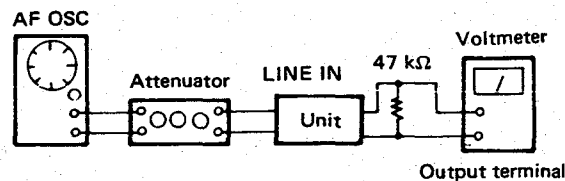
6. VU meter adjustment

Insert the MTT-150 test tape into the cassette holder. Play the MTT-150 back. Adjust the R321 (L ch.) and R322 (R ch.) semi-fixed resistors so that the LED of 0dB of VU meter light on.

7. Recording bias adjustment

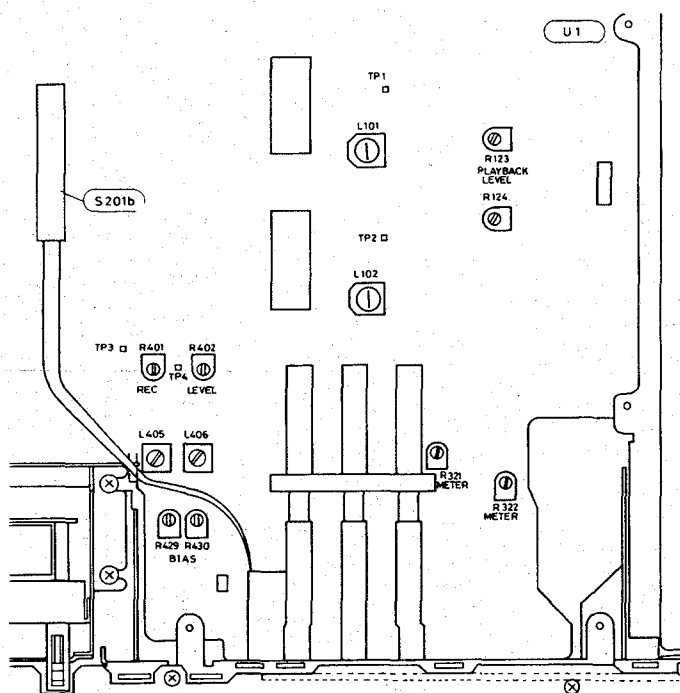
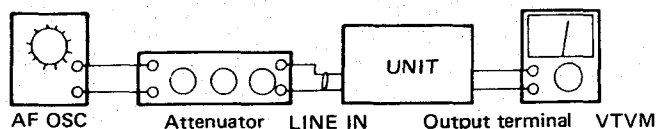
Insert the normal blank tape into the cassette holder. Press the recording and pause buttons together and put the cassette deck into the recording mode. Apply the 400Hz signal to line-in terminal. Adjust the input level volume so that the 0dB indicator light up.

Then set the attenuator for -10dB input level. Release the pause button and record on the tape. Next change the frequency of the 10kHz and record again. Adjust the R429 (L ch.) and R430 (R ch.) so that the 400Hz and 10kHz playback level become same.

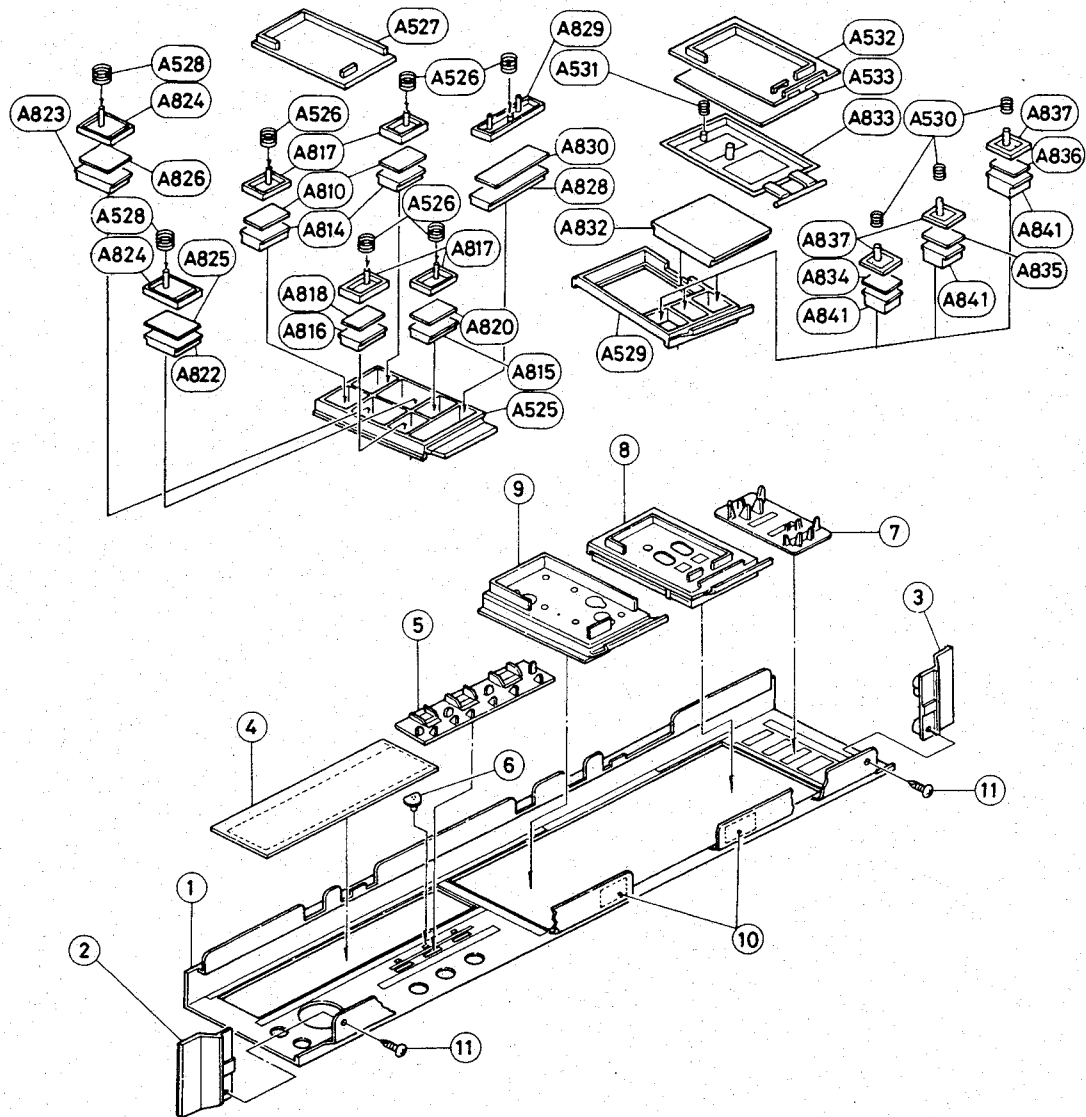


8. Recording level adjustment

Insert the normal blank tape into the cassette holder. Apply the 1,000Hz signal to line-in terminal. Put the cassette deck into the recording mode. Adjust the input level volume so that the voltmeter reads 775mV. Record on the tape. Adjust the R401 (L ch.) and R402 (R ch.) so that the playback level becomes 775mV ± 0.5 dB.



FRONT PANEL-EXPLODED VIEW



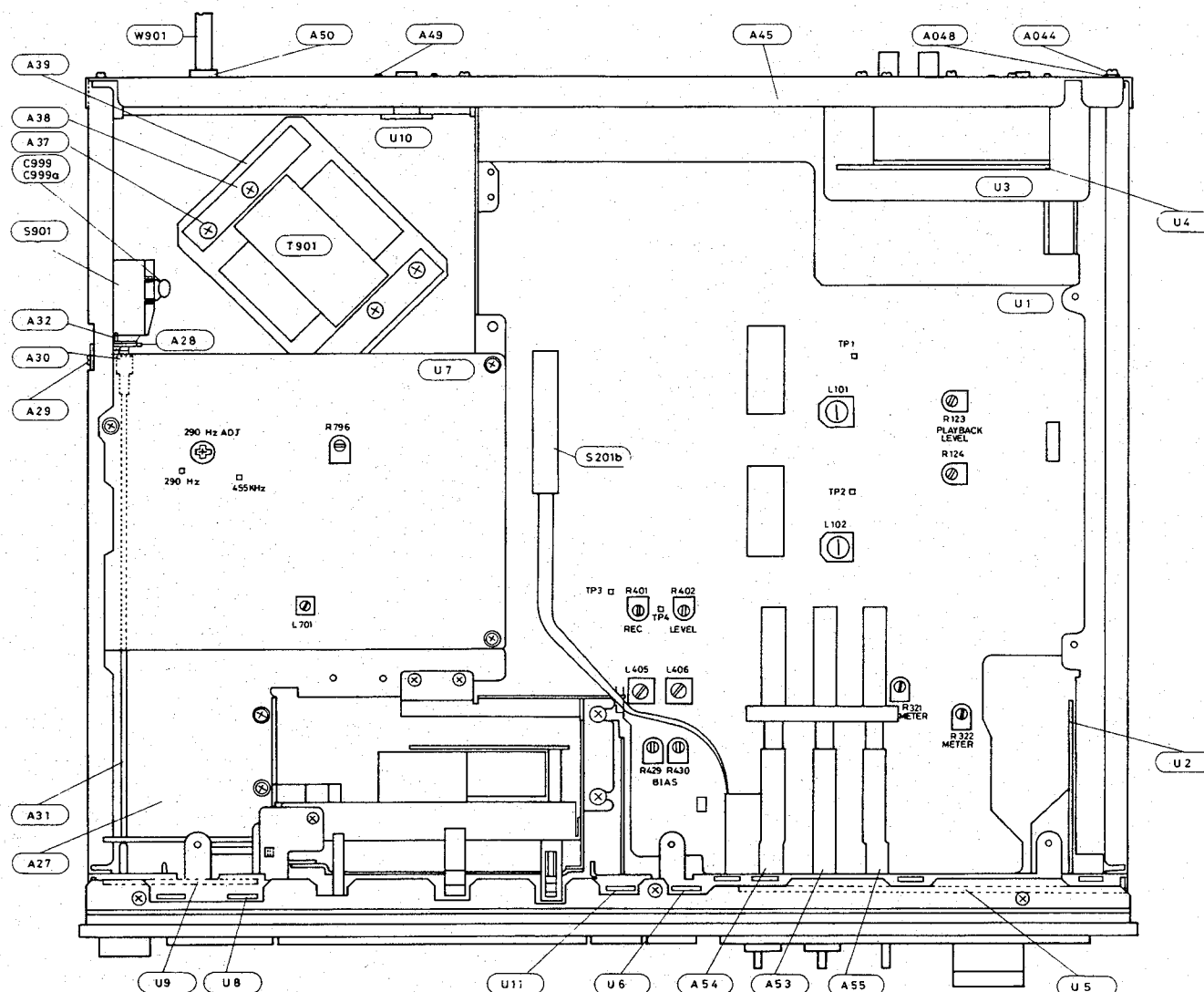
REF. NO. PARTS NO. DESCRIPTION

1	16198121	Front panel ass'y
2	28125116	End cap, right side
3	28125115	End cap, left side
4	28191099	Clear plate
5	27267139	Guide, push
6	28198560A	Facet
7	27267140	Guide, switch
8	27267142A	Guide, left side
9	27267141A	Guide, right side
10	27262155	Plate
11	833130080	3TTP+8P, Tap screw
A525	27267141A	Guide, right side
A526	27180090	Spring
A527	28400043A	Lid, right side
A528	27180095	Spring
A529	27267142A	Guide, left side
A530	27180093	Spring
A531	27180094	Spring
A532	28400044A	Lid, left side
A533	2726132B	Plate, counter

REF. NO. PARTS NO. DESCRIPTION

A810	27262133-1	Plate FF
A814~A816	28320601A	Knob A
A817	28320602A	Knob, base
A818	27262136-1	Plate, auto space
A820	27262135-1	Plate, rec
A822, A823	28320603A	Knob B
A824	28320604A	Knob, base
A825	27262137-1	Plate, stop
A826	27262138-1	Plate, play
A828	28320605A	Knob, pause
A829	28320606B	Knob, base
A830	27262139-1	Plate, pause
A832	28320642-1	Knob C
A833	28320643	Knob, base
A834	27262140-1	Plate 46
A835	27262141-1	Plate 60
A836	27262142-1	Plate 90
A837	28320609B	Knob, base
A841	28320608A	Knob T

COMPONENT LOCATION



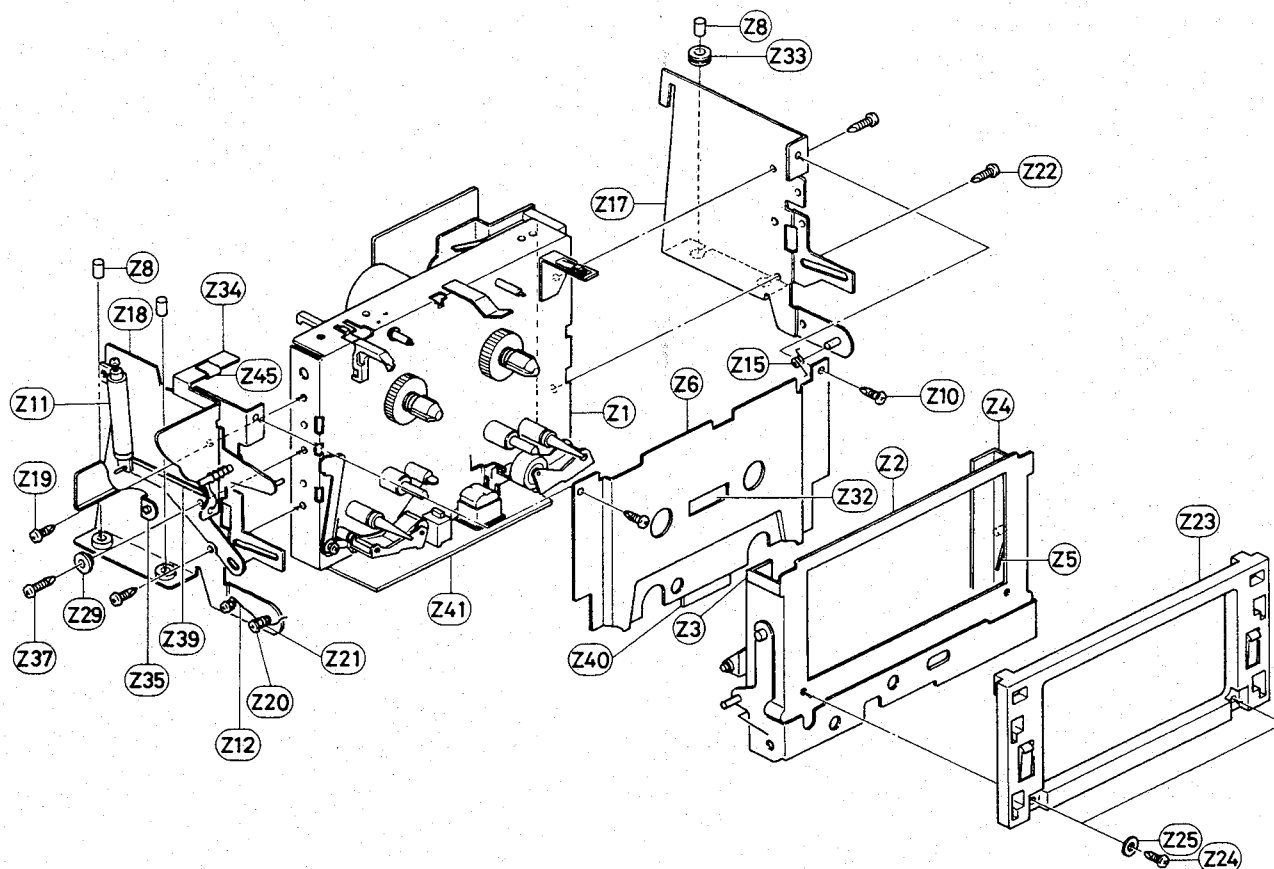
REF. NO. PARTS NO. DESCRIPTION

A1	27110150A	Front bracket
A4	27140636	Bracket, meter
A10	27140556	Bracket, headphone
A11	834130068	3TTS+6B, Tap screw
A13	27140557	Bracket, meter
A14	834130088	3TTS+8B, Tap screw
A16	27140536	Bracket, pc board
A17	834130088	3TTS+8B, Tap screw
A19	27300420	Frame, meter
A20	28130127A	Plate, meter
A21	834130088	3TTS+8B, Tap screw
A22	27262156	Plate, recording
A24	27115093	Side bracket
A25	834130068	3TTS+6B, Tap screw
A27	27100046A	Chassis
A28	27140478	Bracket, power
A29	834130068	3TTS+6B, Tap screw
A30	28320135	Connector
A31	27260034	Shaft
A32	82113006	3P+6FN, Pan head screw
A37	838440109	4TTB+10C(BC), Tap screw
A38	870065	Washer, power transformer
A39	27300412	Base, power transformer
A43	27130270	Bracket
A44	834130088	3TTS+8B, Tap screw

REF. NO. PARTS NO. DESCRIPTION

A45	27120367	Back panel (D)
	27120368	Back panel (G)
	27120369	Back panel (W)
A48	87313006	M-3B, Toothed washer
A49	82142604	2.6P+4F(BC), Pan head screw
A50	270025	SR-3P4, Strainrelief (D)
	270280	SR-4K-4, Strainrelief (G/W)
A53	27273013	Joint, center
A54	27273015	Joint, left
A55	27273014	Joint, right
A301	28184143	Top cover
A302	838440089	4TTB+8C(BC), Tap screw
A303	834430108	3TTS+10B(BC), Tap screw
A501	16198121	Front panel ass'y
A502	838130068	3TTB+6B, Tap screw
A504	28140024	4x5x150mm, Cushion
A540	28400052-1	Lid
A541	28400053-1A	Window
A631	27170126	Bottom board
A632	27175030	Leg
A633	838130068	3TTB+6B, Tap screw
A801	28320635	Knob, power
A802	28320640	Knob, switch
A803	28320636	Knob, eject
A804	28320641	Knob, selector

TAPE MECHANISM-EXPLODED VIEW



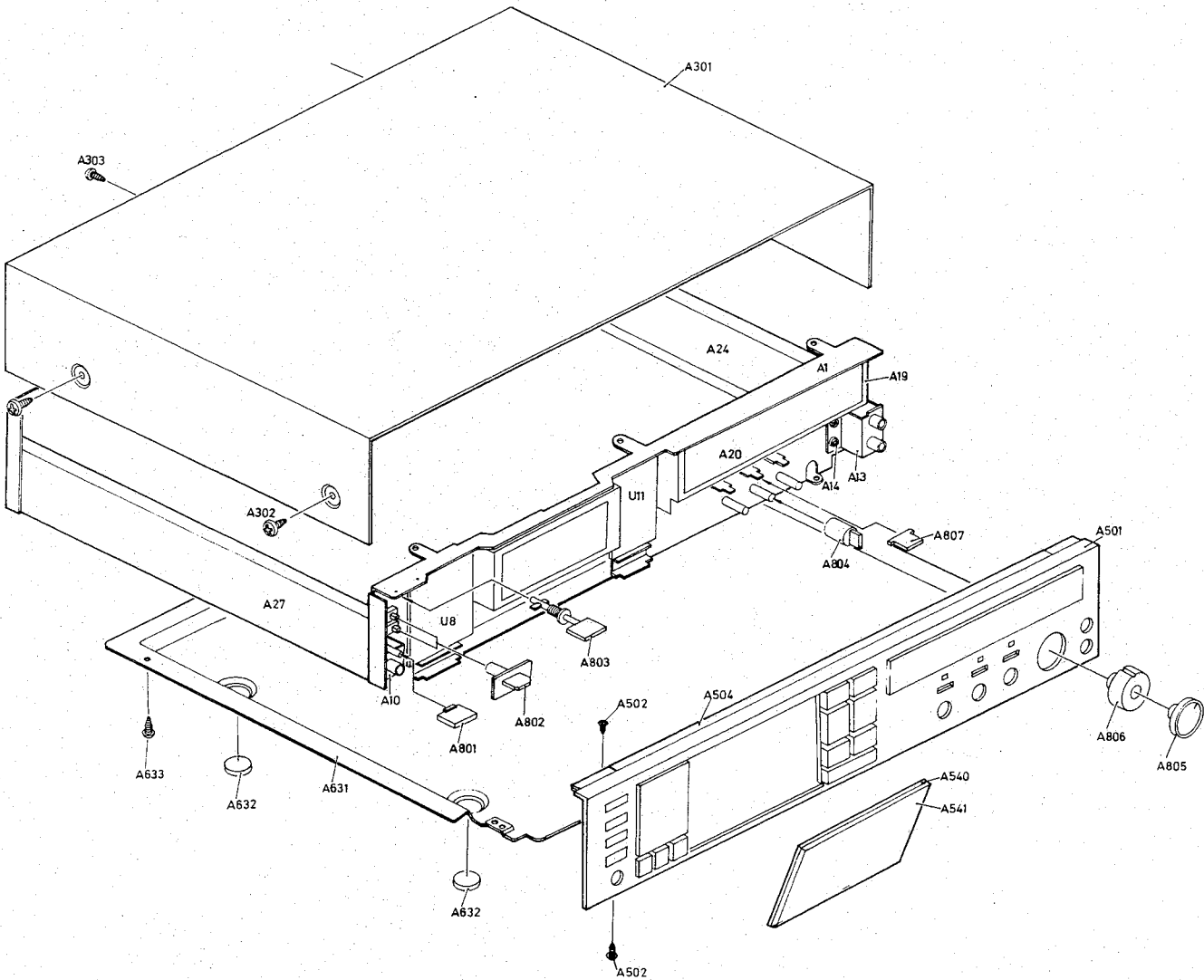
REF. NO. PARTS NO. DESCRIPTION

Z1	244025	NDM-20, Tape deck
Z2	24610630-1	Holder
Z3	24610631-1	Holder, left
Z4	24610632-2	Holder, right
Z5	24605300	Spring
Z6	24610642	Plate
Z8	27265032	3φx4x6, Ring
Z10	833125059	2.5TTP+5C, Tap screw
Z11	24610508	Damper
Z12	24605296	Spring
Z15	24605299A	Spring
Z17	24610638	Side plate, right
Z18	24610640	Side plate, left
Z19	833125059	2.5TTP+5C, Tap screw
Z20	833130127	3TTP+12S, Tap screw
Z21	27265057	3φx4x5, Ring

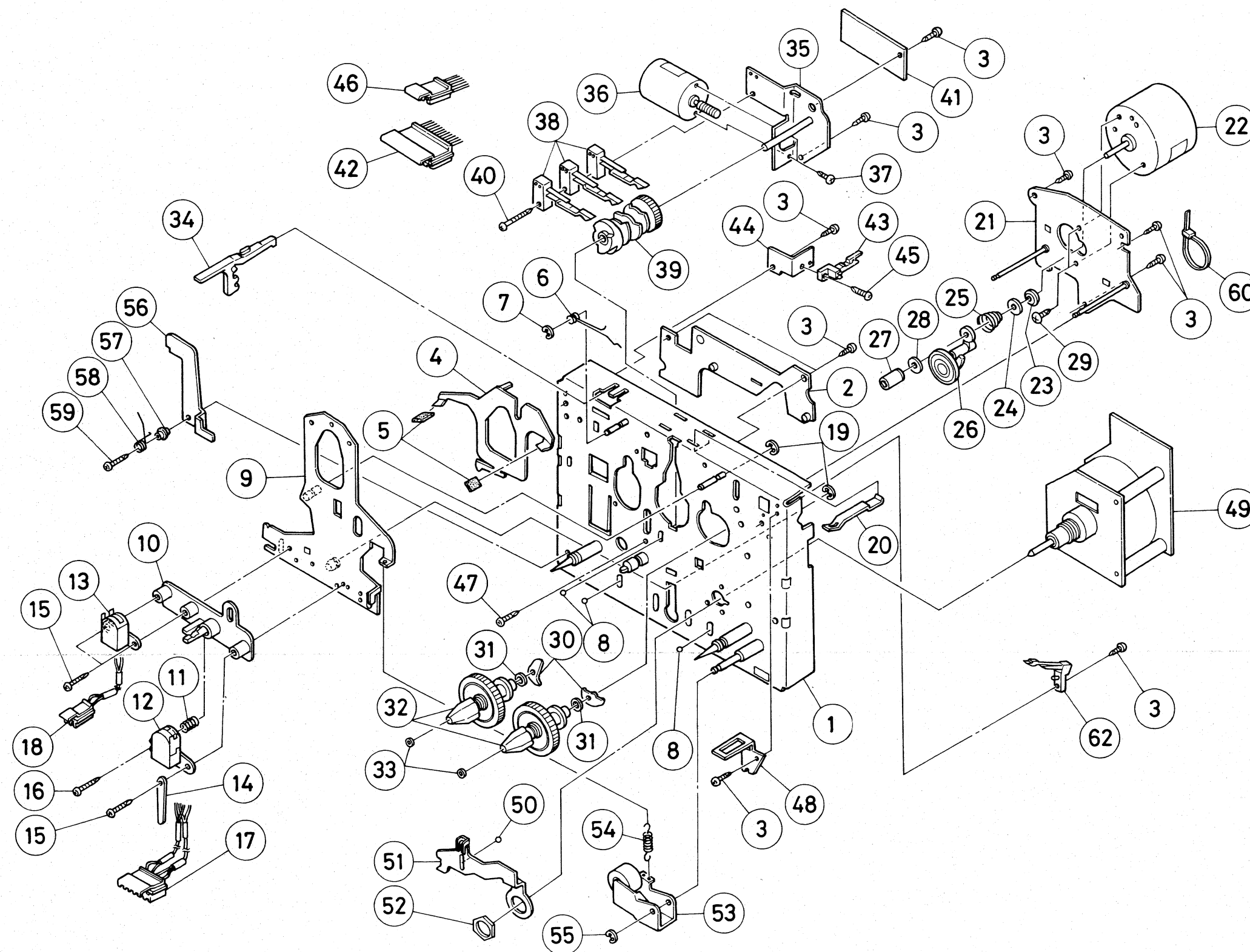
REF. NO. PARTS NO. DESCRIPTION

Z22	833125059	2.5TTP+5C, Tap screw
Z23	24610641	Holder, cassette
Z24	82522004	2B+4FN(Ni), Screw
Z25	8762200604	W2x6B(Ni), Flat washer
Z29	24610644	Spacer
Z32	24610643	Plate
Z33	270638	Cushion
Z34	24603200A	Lecer, eject
Z35	893030S	ES-3, Circlip
Z36	24603202A	Lever
Z37	833125089	2.5TTP+8C, Tap screw
Z39	24605371	Spring
Z40	27150149	Shielded plate
Z41	27150148	Shielded plate
Z45	28140383	Cushion

CHASSIS-EXPLODED VIEW



REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
A805	28320637	Knob, level, left	U3	16198565	NAAF-1365, Input and output
A806	28320638	Knob, level, right			terminal pc board ass'y
A807	28320639	Knob, push		16204565A	NAAF-1365a, Input and output
C999	3500060	0.01μF, 125V, Capacitor, CS [D]			terminal pc board ass'y
C999	3500065A	0.01μF, 400V, Capacitor, IS [G]	U4	16198566	NAPS-1366, Power supply pc board
C999, C998	3500065A	0.01μF, 400V, Capacitor, IS [W]			ass'y
C999a	27300080	Cover, capacitor	U5	16198567	NADIS-1367, Meter pc board ass'y
P201	25045092	HLJ-0607-01-020, Stereo headphone jack	U6	16198568	NAPL-1368, Dolby indicator pc board ass'y
S901	25035224	NPS-121-L188P, Power switch [D]	U7	16198543B	NACOC-1143b, Mechanism control pc board ass'y
	25035192	NPS-122-L156P, Power switch [G]			
	25035207	NPS-121-L171P, Power switch [W]	U8	16239544	NADIS-1144, Tape counter pc board ass'y
S902	25065123	NSS-1258P, Voltage selector switch [W]			
S201b	25030217-1	NRS-105-20BU, Remote switch	U9	16392545A	NASW-1145a, Memory/Timer switch pc board ass'y
T901	230585	NPT-753D, Power transformer [D]			
	230586	NPT-753G, Power transformer [G]	U10	16239546	NARM-1146, Remote control terminal pc board ass'y
	230587	NPT-753DG, Power transformer [W]	U11	16239547	NASW-1147, Control key pc board ass'y
U1	16198563	NAAF-1363, Rec. and playback amplifier pc board ass'y	W901	253099A	AS-UC-3, Power supply cable [D]
	16204563A	NAAF-1363a, Rec. and playback amplifier pc board ass'y		253083	AS-CEE, Power supply cable [G/W]
U2	16198564	NAAF-1364, Microphone amplifier pc board ass'y		27140577	Bracket, DIN [G/W]
				260208	Binder
			Note: D: Only 120V model G: Only 220V model W: Only 120/220V model		

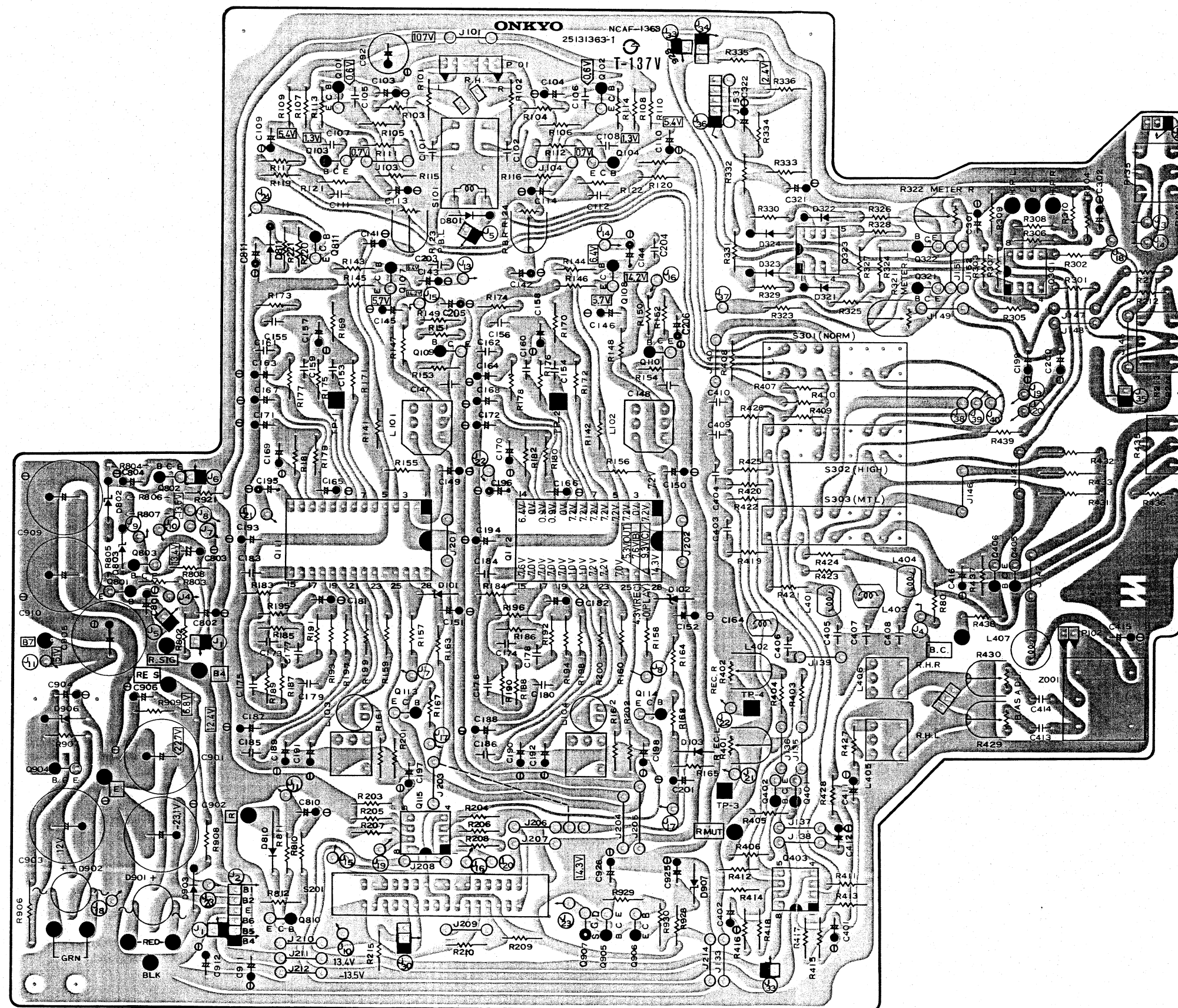
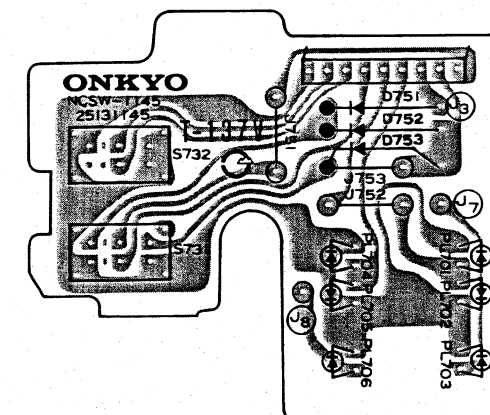
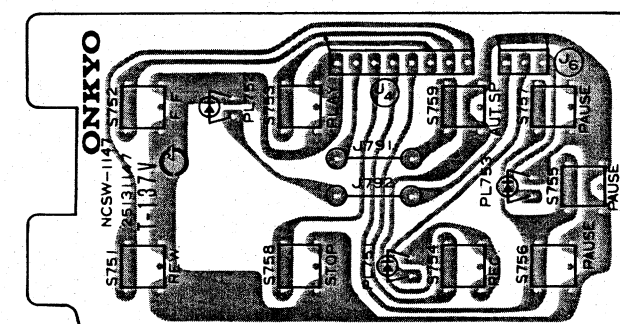
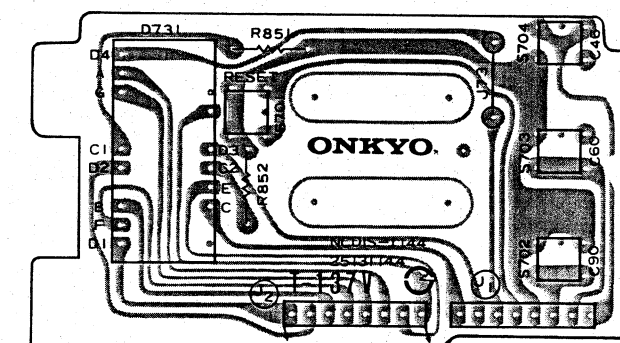


REF. NO. PARTS NO. DESCRIPTION

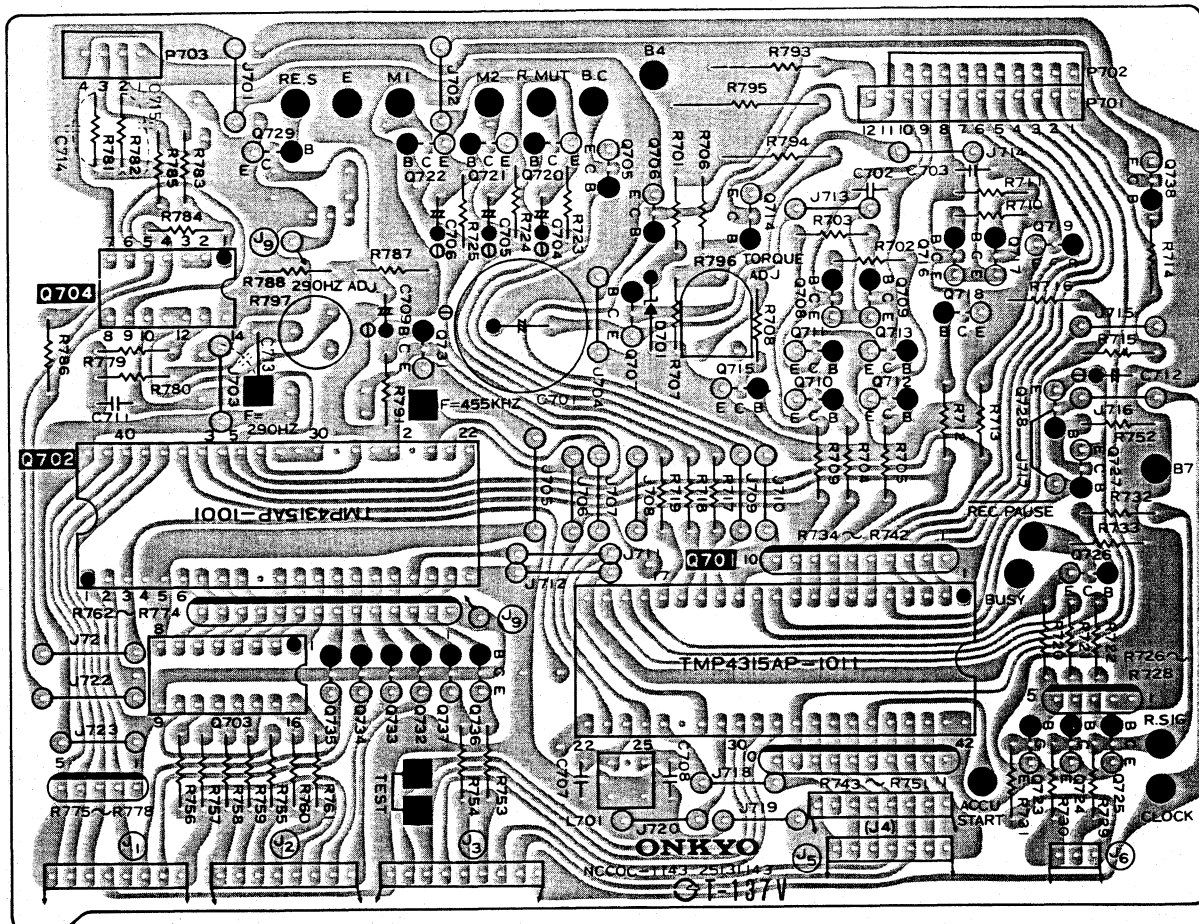
1	24610793	Mechanism chassis
2	24606136	Sensor pc board ass'y
3	833125059	2.5x5, Pan head screw
4	24610664	Brake plate
5	24610376	Brake rubber
6	24605304	Spring
7	8930251	E2.5, Circlip
8	24610351	2φ, Steelball
9	24610665	Head base
10	24610346	Head stand
11	24605185	Spring
12	24600018	Rec. and playback head
13	24600025	Erase head
14	24610666	Holder, wire
15	82512012	2x12, Bind screw
16	801198	2x14, Frange pan head screw
17	25050115	Connector
18	25050119	Connector
19	8930302	E3, Circlip
20	24605183	Cassette holding spring
21	24610667	Motor holding plate
22	24601054	Real motor
23	24610373	Holder, spring
24	24610374	Washer
25	24605194	Spring
26	24602067	Idler lever
27	24601102	Motor pulley
28	24610375	Felt
29	82512603	2.6x3, Bind screw
30	24605303	Spring, back tension
31	24610792	3.1x5.4x013, Washer
32	24602165	Reel stand
33	24610349	Washer
34	24603205	Lever, recording
35	24610668	Holding plate
36	24601103	Assist motor
37	801259	2x3, Machine screw
38	24606119	Leaf switch
39	24602133	Cam gear
40	833125209	2.5x10, Pan head screw
41	24606135	Motor control pc board ass'y
42	25050120	Connector
43	24603129	Leafswitch
44	24610660	Holding plate
45	833125069	2.5x6, Screw
46	25050121	Connector
47	801250	Pan head screw
48	24610659	Protection plate
49	24601114	Direct drive motor
50	24610279	Steelball
51	24610794	Holding plate, head
52	24610795	Nut
53	24610672	Pinch roller arm
54	24605370	Spring
55	8930201	Circlip
56	24610345	Locked plate
57	24610344	Collar
58	24605184	Spring
59	833125109	Pan head screw
60	260208	Binder
61	24601106	Reel motor ass'y (22-28)
62	24606104	Leaf switch

PC BOARD VIEW FROM COMPONENT SIDE

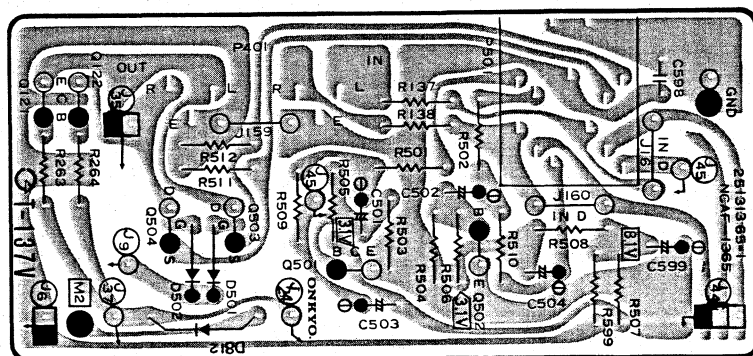
REC/PLAYBACK AMPRIFIER PC BOARD (NAAF-1363)

MEMORY/TIMER SWITCH
PC BOARD (NASW-1145)CONTROL KEY INPUT
PC BOARD (NASW-1147)TAPE COUNTER PC
BOARD (NADIS-1144)

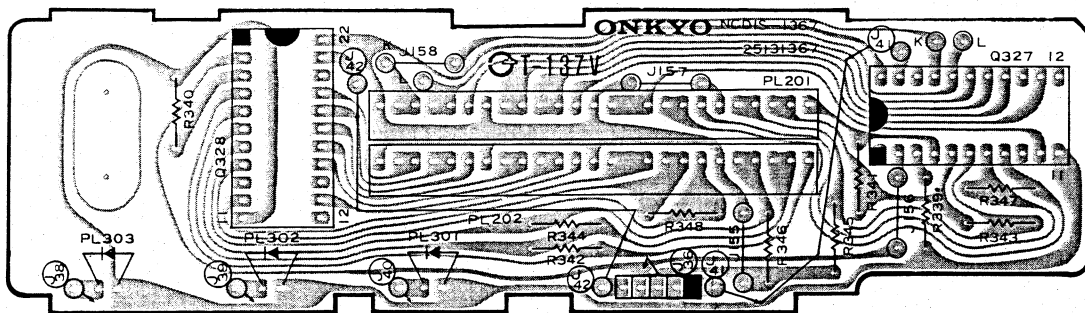
MECHANISM CONTROL PC BOARD (NACOC-1143)



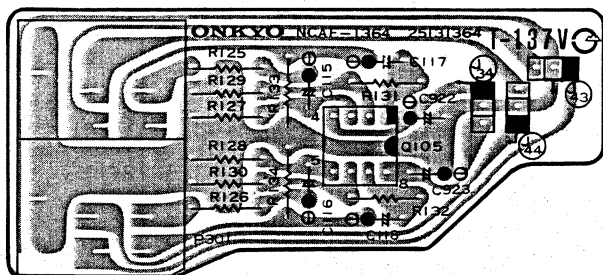
INPUT/OUTPUT TERMINAL PC BOARD (NAAF-1365)



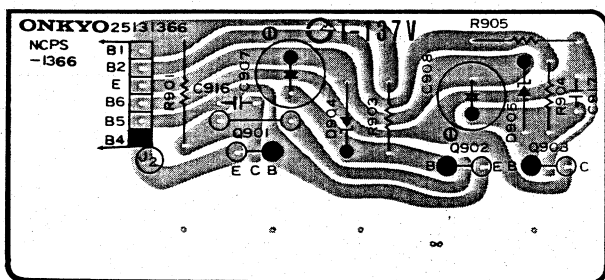
METER CIRCUIT PC BOARD (NADIS-1367)



MIC. AMPLIFIER PC BOARD (NAAF-1364)



POWER SUPPLY PC BOARD (NAPS-1366)



PRINTED CIRCUIT BOARD-PARTS LIST

REC. AND PLAYBACK AMPLIFIER PC BOARD (NAAF-1363/a) — PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
ICs		
Q111, Q112	222668	HA-12038, Dolby
Q115	222534 or 222502	NJM-4559DX or NJM-4558DX
Q301	222654	NJM-4556D
Q323	222465	NJM-4558D
Q403	222579	NJM-4560D
Transistors		
Q101–Q104	2212256 or 2211896	2SC2458Ⓢ (L) or 2SC1815Ⓢ (BL)
Q107, Q108	2211255, 2212115 or 2210746	2SC1815(GR), 2SC2458(GR) or 2SC945A(P)
Q109, Q110	2211254, 2211253, 2212114 or 2212113	2SC1815(Y), 2SC1815(O), 2SC2458(Y) or 2SC2458(O)
Q113, Q114	2211255,	2SC1815(GR),
Q321, Q322	2212115 or	2SC2458(GR) or
Q401, Q402	2210746	2SC945A(P)
Q405	2211612 or 2211683	2SD471(L) or 2SD468(C)
Q406	2211554	2SA562TM(Y)
Q801	2211255, 2212115 or 2210746	2SC1815(GR), 2SC2458(GR) or 2SC945A(P)
Q802	2211454, 2212124 or 2210804	2SA1015(Y), 2SA1048(Y) or 2SA733A(Q)
Q803	2211254, 2211253, 2212114 or 2212113	2SC1815(Y), 2SC1815(O), 2SC2458(Y) or 2SC2458(O) [G/W]
Q810	2211254, 2211253, 2212114 or 2212113	2SC1815(Y), 2SC1815(O), 2SC2458(Y) or 2SC2458(O)
Q811	2211454, 2212124 or 2210804	2SA1015(Y), 2SA1048(Y) or 2SA733A(Q)
Q904	2201074 or 2201035	2SD880(Y) or 2SD325(E)
Q905	2211612 or 2211683	2SD471(L) or 2SD468(C)
Q906	2211254 or 2211253	2SC1815(Y) or 2SC1815(O)
Q907	2211944, 2211945 or 2211946	2SK246(Y), 2SK246(GR) or 2SK246(BL)
Diodes		
D101, D102	2240931, 2240932, 2239452 or 2239453	GZA5.1X, GZA5.1Y, RD5.1EB2 or RD5.1EB3
D103, D811	223105 or	1S1555 or
D321–D324	223145	1S2076TD
D802	2240931, 2240932, 2239452 or 2239453	GZA5.1X, GZA5.1Y, RD5.1EB2 or RD5.1EB3
D803	223967, 2241151, 2241152 or 2241153	RD15EB, GZA15X, GZA15Y or GZA15Z [G/W]
D810	223103 or 223132	1N60 or 1K60
D801	223105 or 223133	1S1555 or DS442X
D901	223868	2W02
D902	223862	WL-01
D903	223105 or 223145	1S1555 or 1S2076TD
D906	2240953 or 2239491	GZA5.6Z or RD6.2EB1
D907	2240931, 2240932, 2239452 or 2239453	GZA5.1X, GZA5.1Y, RD5.1EB2 or RD5.1EB3

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Coils		
L101, L102	233221	NMC5021
L103, L104	233245	NMC2029
L401, L402	24606069	NCH-1007
L403, L404	24606072	NCH-1010
L405, L406	233247	NCH-4054
L407	233235	NCH-2050
Oscillator block		
Z001	24606115	NOB-016
Capacitors		
C103, C104	392880337	3.3μF, 50V, LL
C109, C110	352741009	10μF, 16V, Elect.
C113, C114	352732209	22μF, 10V, Elect.
C141, C142	352744709	47μF, 16V, Elect.
C143–C146	352741009	10μF, 16V, Elect.
C149, C150	352731019	100μF, 10V, Elect.
C151, C152	352732209	22μF, 10V, Elect.
C157, C158	392841007	10μF, 16V, LL
C163, C164	352750479	4.7μF, 25V, Elect.
C165–C168	352781599	0.15μF, 50V, Elect.
C169–C172	352784799	0.47μF, 50V, Elect.
C181, C182	392841007	10μF, 16V, LL
C187, C188	352750479	4.7μF, 25V, Elect.
C189, C190	352781599	0.15μF, 50V, Elect.
C191, C192	352784799	0.47μF, 50V, Elect.
C193, C194	352732219	220μF, 10V, Elect.
C195–C200	352741009	10μF, 16V, Elect.
C201	352742209	22μF, 16V, Elect.
C205, C206	352741009	10μF, 16V, Elect.
C301, C302	352741009	10μF, 16V, Elect.
C321, C322	352750479	4.7μF, 25V, Elect.
C401, C402	352781599	0.15μF, 50V, Elect.
C411, C412	352750479	4.7μF, 25V, Elect.
C415	352741009	10μF, 16V, Elect.
C416	352722219	220μF, 6.3V, Elect.
C801	352750479	4.7μF, 25V, Elect.
C802	352741009	10μF, 16V, Elect.
C803	352750479	4.7μF, 25V, Elect. [G/W]
C804	352732209	22μF, 10V, Elect.
C810	352783399	0.33μF, 50V, Elect.
C811	352750479	4.7μF, 25V, Elect.
C901, C902	352752229	2,200μF, 25V, Elect.
C903	352744729	4,700μF, 16V, Elect.
C904	352722219	220μF, 6.3V, Elect.
C905	352726829	6,800μF, 6.3V, Elect.
C906	352750479	4.7μF, 25V, Elect.
C909, C910	352744729	4,700μF, 16V, Elect.
C911, C912	352741019	100μF, 16V, Elect.
C921	352742219	220μF, 16V, Elect.
C925	352732209	22μF, 10V, Elect.
C926	352744709	47μF, 16V, Elect.
Resistors		
R123, R124	5215046 or 5215023	N08HR50KBC, Playback level adjustment semi-fixed
R135, R136	5104123	N16RKL50KA40F, Input level control variable
R213, R214	5147014	N16RGL10KB20, Output level control variable
R321, R322	5215003 or 5215022	N08HR20KBC, Meter adjustment semi-fixed
R401, R402	5215044 or 5215020	N08HR5KBC, recording level adjustment semi-fixed
R429, R430	5015047 or 5215024	N08HR100KBC, Bias current adjustment semi-fixed
R431	441521014	100Ω, 1/2W, Metal oxide film
R432	441521214	120Ω, 1/2W, Metal oxide film
R433	441521804	18Ω, 1/2W, Metal oxide film
R435	5146035	N16RLC500B20, Accubias adjustment variable
R906	441520224	2.2Ω, 1/2W, Metal oxide film
Relay		
S101	25065174	NRL-2P1ADC12-09
Switches		
S201a	25065193	NSS-4687
S301–S303	25035274	NPS-362-L238

CIRCUIT NO.	PARTS NO.	DESCRIPTION
P101 P102	Plugs	
	25055037	NPLG-6P28
	25055038	NPLG-2P29
	Radiator	
	27160029	
	Screw	
	82113006	3P+6FN, Pan head screw

MIC. AMPLIFIER PC BOARD (NAAF-1364) – PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q105	IC	
	222534 or	NJM4559DX or
	222502	NJM4558DX
C115, C116 C117, C118 C922, C923	Capacitors	
	392883397	0.33 μ F, 50V, LL
	352780109	1 μ F, 50V, Elect.
	352741009	10 μ F, 16V, Elect.
P301	Jack	
	25045091	HLJ-0335-01-030, Mic.

INPUT TERMINAL PC BOARD (NAAF-1365) [D model]

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q121, Q122	Transistors	
	2211706	2SD655(F)
D812	Diode	
	223132 or	1K60 or
	223103	IN60
P401	Terminal	
	25045084	NPJ-4PDBL42, Input/output

INPUT TERMINAL PC BOARD (NAAF-1365a) [G/W model]

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q121, Q122 Q501, Q502 Q503, Q504	Transistors	
	2211706	2SD655(F)
	2211406	2SC2240(BL)
	2211944 or	2SK246(Y) or
	2211945	2SK246(GR)
D501, D502 D812	Diodes	
	223105 or	1S1555 or
	223133	DS442X
	223132 or	1K60 or
	334103	IN60
C501, C502 C503, C504 C599	Capacitors	
	392880107	1 μ F, 50V, LL
	352780109	1 μ F, 50V, Elect.
	352741009	10 μ F, 16V, Elect.
P401 P501	Terminals	
	25045084	NPJ-4PDBL42, Input/ output
	25050064	NSCT-5P18, DIN

POWER SUPPLY PC BOARD (NAPS-1366) – PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q901 Q902 Q903	Transistors	
	2201035 or	2SD325(E) or
	2201074	2SD880(Y)
	2201285 or	2SD882(Q) or
	2201286	2SD882(P)
	2201275 or	2SB772(Q) or
	2201276	2SB772(P)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D904, D905	Diodes	
	2241132 or	GZA13Y or
	2239653	RD13EB3
R901 R905	Resistors	
	441520104	1 Ω , 1/2W, Metal oxide film
	441520224	2.2 Ω , 1/2W, Metal oxide film
C907, C908	Capacitors	
	352742219	220 μ F, 16V, Elect.
	Radiator	
	27160075A	
	Spacer	
	223019	AC-229, Transistor

METER CIRCUIT PC BOARD (NADIS-1367) – PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q327, Q328	ICs	
	222636	IR2E07
PL201, PL202 PL301–PL303	L.E.Ds	
	225091	GL-112M13, Array
	225093	SLP-260C
	Spacer	
	27270071	L.E.D.

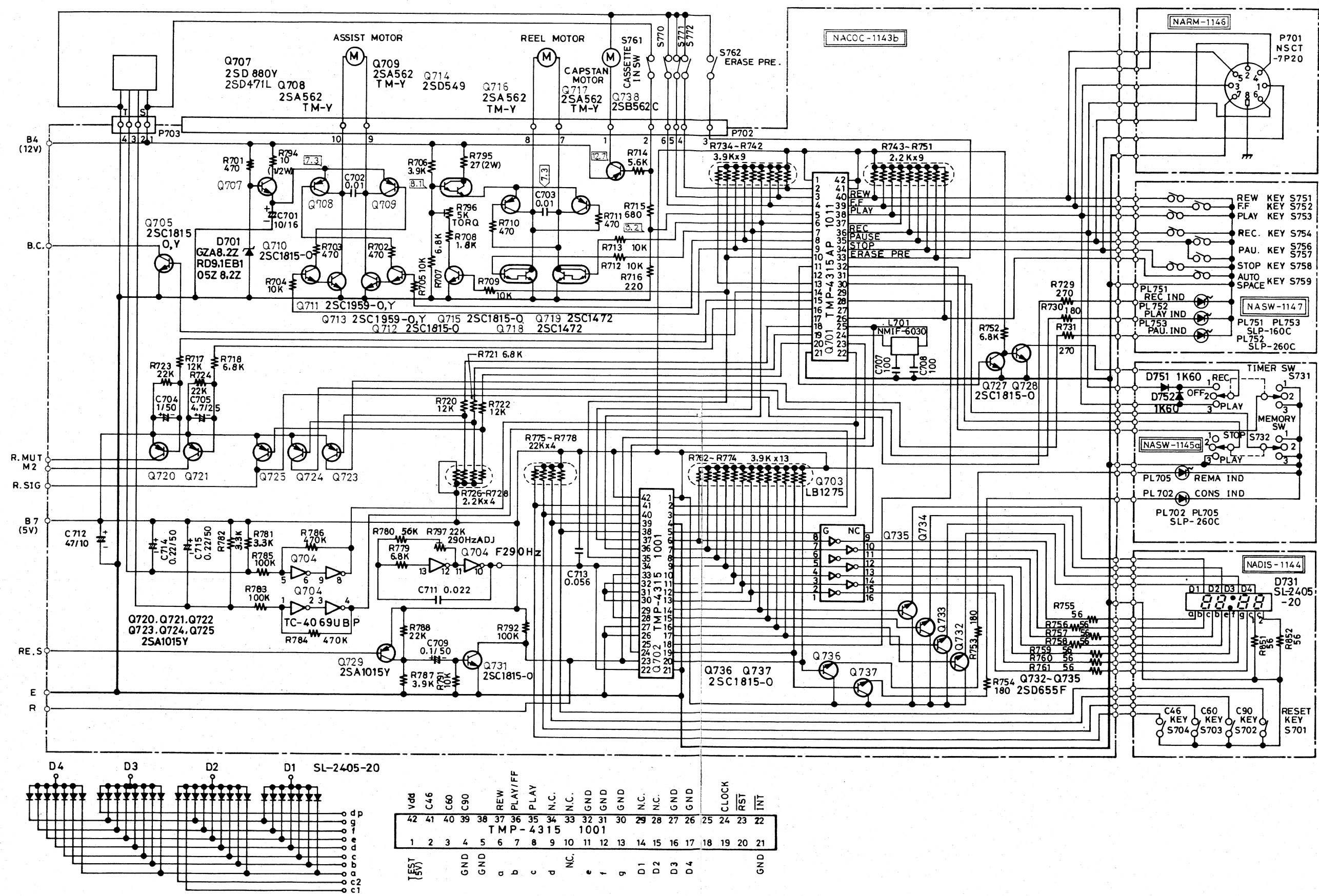
DOLBY INDICATOR PC BOARD (NAPL-1368) – PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL101, PL102	225092	SLP-16OC, L.E.D.
	27270071	Spacer, L.E.D.

TAPE MECHANISM CONTROL PC BOARD (NACOC-1143b) – PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q701 Q702 Q703 Q704	ICs	
	222637	TPM4315AP-1011, Mechanism control
	222638	TMP4315AP-1001, Tape counter control
	222639	LB1275, Hex inverter
	222840692	TC4069UBP, Hex inverters
Q705, Q715 Q727, Q728 Q731, Q736 Q737 Q707 Q708, Q709 Q711, Q713 Q714 Q716, Q717 Q718, Q719 Q720, Q721 Q723–Q725 Q729 Q732–Q735 Q738 Q710, Q712	Transistors	
	2211253,	2SC1815(O),
	2211254,	2SC1815(Y),
	2212113 or	2SC2458(O) or
	2212114	2SC2458(Y)
	2201074	2SD880(Y)
	2211554	2SA562TM(Y)
	2211544	2SC1959(Y)
	2201060	2SD549
	2211554	2SA562TM(Y)
	2211951 or	2SC1472K(A) or
	2211952	2SC1472K(B)
	2212124 or	2SA1048(Y) or
	2211454	2SA1015(Y)
	2211706	2SD655(F)
	2211563	2SB562(C)
	2211253 or	2SC1815(O) or
	2212113	2SC2458(O)

SCHEMATIC DIAGRAM

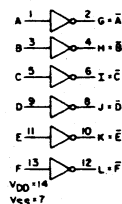


TMP4315AP-1001

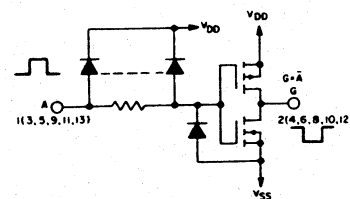
V _{DDd} (+5V)V	1	42	V _{DD} (+5V)
(Rotation det) SUPPLY	2	41	C46
(Rotation det) TAKE UP	3	40	C60
GND	4	39	C90
GND	5	38	REST (Counter rest)
COUNTER DISP. SEg. a	6	37	REW
COUNTER DISP. SEg. b	7	36	PLAY/FF
COUNTER DISP. SEg. c	8	35	PLAY
COUNTER DISP. SEg. d	9	34	COUNTER CLK, 289Hz
COUNTER DISP. SEg. N.C.	10	33	N.C.
COUNTER DISP. SEg. e	11	32	GND
COUNTER DISP. SEg. f	12	31	GND
COUNTER DISP. SEg. g	13	30	GND
COUNTER DISP. Dig. D ₁	14	29	N.C.
COUNTER DISP. Dig. D ₂	15	28	N.C.
COUNTER DISP. Dig. D ₃	16	27	GND.
COUNTER DISP. Dig. D ₄	17	26	GND.
COUNTER ZERO OUTPUT	18	25	X OUT Clock out
CONS. OUTPUT	19	24	X IN Clock input
REMA. OUTPUT	20	23	REST
GND	21	22	COUNTER CLK. 289 Hz

TC4069UBP (Hex. inverter)

Block diagram

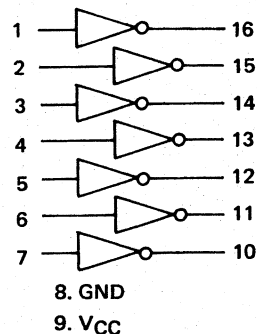


Logic diagram



LB1275 (Inverter)

LB1275

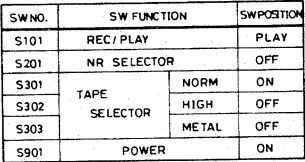


TMP4315AP-1011

V _{DD} (+5V)	1	42	V _{DD} (+5V)
ASSIST MOTOR CONTROL SWITCH No. 1	2	41	SEARCH
ASSIST MOTOR CONTROL SWITCH No. 2	3	40	REW
ASSIST MOTOR CONTROL SWITCH No. 3	4	39	FF
CASSETTE IN	5	38	PLAY
REEL MOTOR { FORWARD	6	37	ACCU START
REEL MOTOR { REVERSE	7	36	REC
ASSIST MOTOR { UP	8	35	PAUSE
ASSIST MOTOR { DOWN	9	34	STOP
0-PLAY	10	33	REC. INH H: Recording inhibiting
TIMER OUT & ACCU CLOCK	11	32	TIMER ON/OFF
ACCU BUSY	12	31	MEMORY PLAY/STOP
BRAKE	13	30	MEMORY ON/OFF
BIAS CONTROL	14	29	2 head/3 head
REC. MUTING	15	28	TAPE COUNTER
MUTING 2	16	27	SEARCH SIG. (not used)
MUTING 1	17	26	AUTO SPACE
PAUSE LED	18	25	X OUT Clock output
PLAY LED	19	24	X IN Clock input
REC. LED	20	23	RESET
GND	21	22	AUTO STOP (Rotation detector pulse input)

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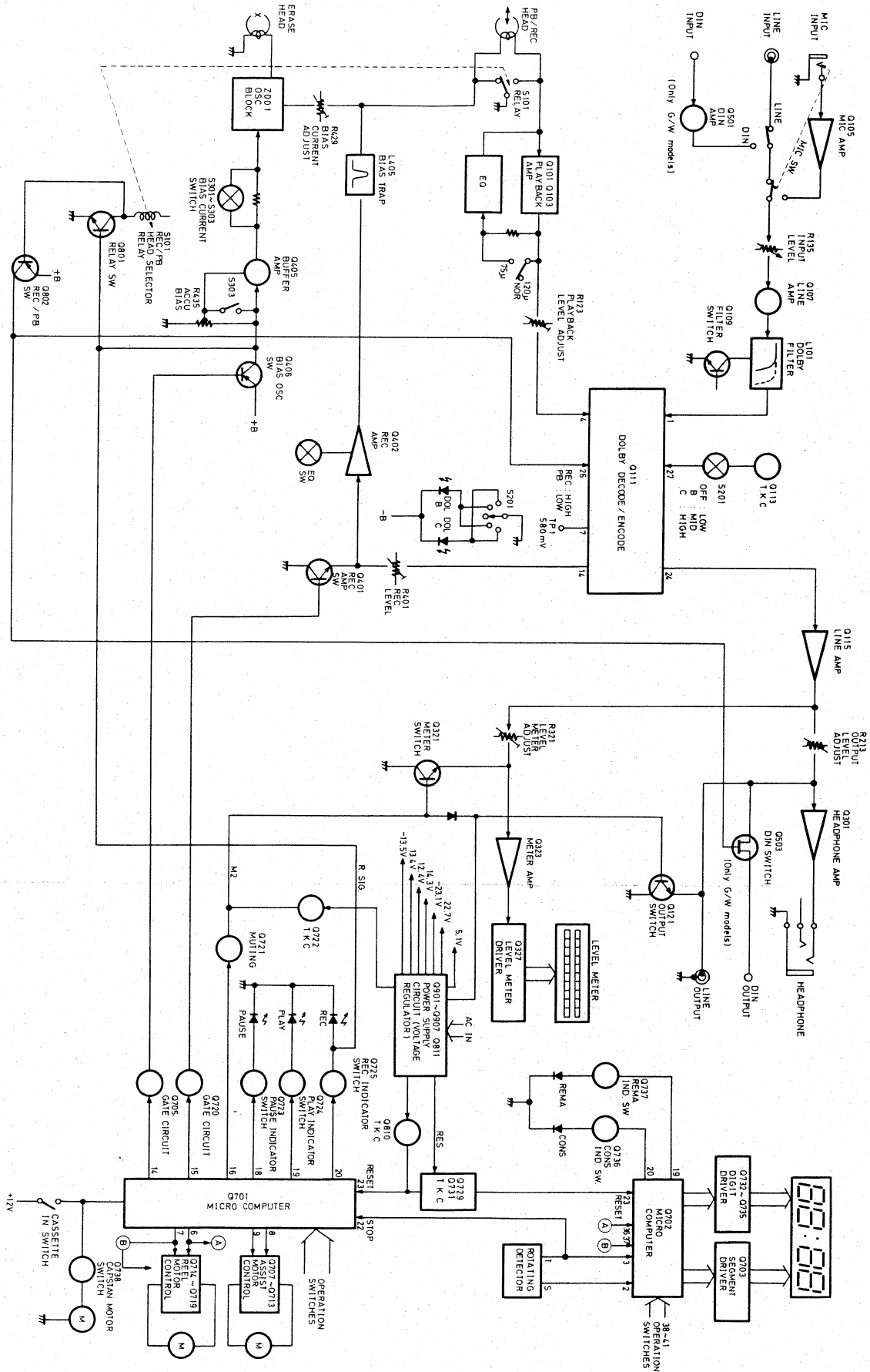




NOTES

- ALL RESISTORS ARE IN OHMS, 1/4 WATT UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN μF , 50VW UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (~~—H—~~) ARE IN $\mu F/WV$.
- VOLTAGE (MEASURED WITH V.T.V.M) V DC VOLTAGE (NO INPUT SIGNAL).
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

BLOCK DIAGRAM



CIRCUIT NO.	PARTS NO.	DESCRIPTION
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D701	Diode	
	2239571 or 2241033	RD9.1EB1 or GZA8.2Z

C701 C704 C705 C709 C712 C714, C715	Elect. capacitors	
	352741009	10 μ F, 16V
	352780109	1 μ F, 50V
	352750479	4.7 μ F, 25V
	352781099	0.1 μ F, 50V
	352734709	47 μ F, 10V
352782299	0.22 μ F, 50V	

R726-R728 R734-R742 R743-R751 R762-R774 R775-R778 R794 R795 R796 R797	Resistors	
	49121222404	2.2k Ω x4, 1/8W, Network
	49121392409	3.9k Ω x9, 1/8W, Network
	49121222409	2.2k Ω x9, 1/8W, Network
	49121392413	3.9k Ω x13, 1/8W, Network
	49121223404	2.2k Ω x4, 1/8W, Network
	441521004	10 Ω , 1/2W, Metal oxide film
	441722704	27 Ω , 2W, Metal oxide film
	5215044	N08HR5KBC, Semi-fixed
	5225076	N10HR22KBDM, Semi-fixed

L701	Transformer	
	232100	NMIF-6030

P702 P703	Plugs	
	25055046 25055045	NPLG-10P34 NPLG-4P-33

TAPE COUNTER PC BOARD (NADIS-1144) – PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D731	L.E.D	
	225094	SL-2405-20, Tape counter
S701-S704	Switches	
	25035275	NPS-111-S239, Reset/C-90/C-60/C-46

MEMORY/TIMER SWITCH PC BOARD (NASW-1145a) – PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D751-D752	Diodes	
	223103 or 223132	1N60 or 1K60
PL702, PL705	L.E.Ds	
	225093	SLP-260C
S731, S732	Switches	
	25065170	NSS-2377, Memory/Timer
	Holder	
	27190130	L.E.D.

REMOTE CONTROL TERMINAL PC BOARD (NARM-1146) – PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
P701	25050070	NSCT-7P20, DIN terminal

CONTROL KEY PC BOARD (NASW-1147) – PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL751, PL753 PL752	L.E.Ds	
	225092 225093	SLP160C SLP260C
S751-S754 S756-S759	Switches	
	25035275	NPS-111-S239, Rewind/FF/Play/ Rec./Stop/Auto space/Pause
	Spacers	
	27270071	

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